

# TOWN OF LOS ALTOS HILLS

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## Water Heater

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### **PLANS & PERMITS**

1. A completed building permit application.
2. The replacement of an existing water heater requires a plumbing permit, and if the heater is electric, an electrical permit.
3. All work must comply with the 2007 Building Code Standards (Building, Electrical, Mechanical, Plumbing and Energy)

### **INSPECTIONS**

One final inspection is required after all work has been completed.

### **CODE REQUIREMENTS**

1. Equipment must be installed in accordance with its listing and the manufacturer's instructions.
2. If the energy factor of the heater is less than 0.58, a R-12 external insulation blanket must be installed.
3. The first five feet (or with water heater replacements the exposed piping if less than five feet) of both the hot and cold water piping entering and leaving the heater must be wrapped with minimum R-4 insulation. Insulation must be kept away from the flue and/or draft hood as required by that materials listing.
4. Water heaters require two seismic straps; one located within the top 1/3 of the water heater unit and one at the bottom 1/3. The bottom strap must be located at least 4" above the water heater controls.
5. Water heaters located in a garage must be elevated so the burners and burner-ignition devices are at least 18" above the garage floor surface. If subject to damage, adequate barriers must be installed.
6. Combustion air must be provided per California Plumbing Code Section 507.0. When the appliance is located in a large room or space (e.g. garage) the combustion air may come from that area. When located in a closet, combustion air must be provided by one or more openings between the closet and a large room or space, directly to the outside, to an area that communicates directly with the outside, or a combination of these. Refer to the Code for specific details and requirements.
7. A fuel burning (gas) water heater may be installed in a closet located in a bathroom or bedroom if installed in accordance with CPC Section 505.1.RH Water Heater

8. Tankless water heaters shall be listed by an approved testing agency (UL, UPC, etc.) and be installed in accordance with it's listing and the manufacturer's requirements. If replacing an existing tank heater with a tankless, it is likely the gas piping will have to be replaced with a larger pipe ran back to the meter. Piping shall be sized and installed in accordance with CPC Chapter 12.
9. If located in an attic or furred space (i.e. closet) where leaking could cause damage to underlying wood framing, the water heater must be set in a pan constructed of water tight corrosion-resistant material. The pan must be fitted with a minimum 3/4" drain that drains to an approved location.
10. If heater is installed on top of ceiling framing, with the total weight not exceeding 400 lbs, then:
  - a. Water heater shall be located on a 3/4" plywood platform attached to the ceiling joists with #10 wood screw or 8d penny nails 6" o.c. at the plywood panel edges and 12" o.c. at intermediate joists.
  - b. If strapping to the adjacent walls as required by 2007 CPC Section 508.2 is not possible, provide strapping to the ceiling joists below. Use 3/4" x 24 gauge perforated plumbers tape encircling top 1/3 of the water heater. Provide minimum 3 evenly spaced diagonal braces to ceiling joists with similar plumbers tape or 1/2" diameter EMT conduit with flatten edges. Use 1/4" diameter x 1" round head machine bolt with washer and nut for bracing connections. • Attach diagonal braces to wood ceiling joists with 1/4" diameter x 3" long lag screws or 1/4" diameter x 2" machine bolts with washers and nut to metal joists.
  - c. Protect plywood platform with corrosion-resistant watertight pan with a minimum 3/4" diameter drain to an approved location beneath the water heater per 2007 CPC Section 508.4.
11. The vent and the water heater must maintain clearance from combustible materials such as wall framing and roofing. Generally the minimum distance is 6" for single wall and 1" for double wall vents and the water heater, but check the manufacturer's listing on the materials. The vent shall terminate a minimum 12" above the roof through flashing at the roof and terminate in a listed and approved vent cap. Vents must be supported in accordance with their listing. Joints between sections of vent connector piping and connections to flue collars or draft hood outlets shall be fastened by sheet metal screws, in accordance with the manufacturer's instructions, or other approved means.
12. All water heaters must have a pressure/temperature (P/T) relief valve. The valve shall be drained to the exterior and terminate toward the ground maintaining between 6" and 24" of clearance from the ground and end of the pipe. The diameter of the valve opening (generally 3/4") must be maintained to the termination of the drain. Check the manufacturer's requirements. When approved by the Chief Building Official, such drain may terminate at other locations (i.e. laundry tub, floor sink, or floor drain). No part of such drain shall be trapped and the terminal end of the drain shall not be threaded.
13. Discharge from a relief valve into a water heater pan shall be prohibited.
14. Water heaters supported on the ground shall rest on level concrete or other approved base extending not less than three (3) inches above the adjoining ground level.
15. Gas connectors must comply with CPC Section 1212.0. Listed flexible gas connectors in compliance with ANSI Z21.24, Standard for Connectors for Gas Appliances may be used if

installed in accordance with their listing. Connectors must be located completely in the same room as the appliance.

16. **Smoke alarms:** When the value of the work exceeds \$1,000, smoke detectors must be installed if they do not exist as follows: in each sleeping room, at a point centrally located in the corridor or area giving access to each separate sleeping area, and on each story. In existing construction, detectors may be battery operated. See CBC Section 907.2.10 and the separate handout on Smoke Detectors for more information.
17. **Spark arrester:** When the value of the work exceeds \$1,000, a spark arrester must be installed on fireplace chimneys if one does not exist per MMC Section II-3-2.06. Spark arresters shall be constructed in conformance with CBC Section 2113.9.1 or 2802.1. See separate handout on Spark Arresters for more information.

### **Prohibited Locations**

**Gas-fired water heaters**, which depend on the combustion of fuel for heat, **shall not be installed in the following locations:**

1. A room used or designed to be used for sleeping purposes,
2. A bathroom,
3. A clothes closet, **or**
4. In a closet or other confined space opening into a bathroom or bedroom.  
Exception: Direct vent water heaters.
5. Water Heaters shall not be installed in attics or other spaces where damage may result from a leaking water heater, without installing an approved safe pan beneath the water heater with a minimum  $\frac{3}{4}$  inch drain to an approved, readily visible location. Where not prohibited by other regulations, water heaters may be located under a stairway or landing.

